**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Casey, William
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-029840
**Date Inspected:** 19-Jul-2013

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** American Bridge/Fluor Enterprises, a JV

**OSM Arrival Time:** 700
**OSM Departure Time:** 1730
**Location:** Job Site

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **CWI Name:** | Jesus Cayabyab,Bernie Docena | | | **CWI Present:** | ☑ Yes | ☐ No | |
| **Inspected CWI report:** | ☐ Yes | ☐ No | ☑ N/A | **Rod Oven in Use:** | ☑ Yes | ☐ No | ☐ N/A |
| **Electrode to specification:** | ☑ Yes | ☐ No | ☐ N/A | **Weld Procedures Followed:** | ☑ Yes | ☐ No | ☐ N/A |
| **Qualified Welders:** | ☑ Yes | ☐ No | ☐ N/A | **Verified Joint Fit-up:** | ☐ Yes | ☐ No | ☑ N/A |
| **Approved Drawings:** | ☑ Yes | ☐ No | ☐ N/A | **Approved WPS:** | ☑ Yes | ☐ No | ☐ N/A |
| | | | | **Delayed / Cancelled:** | ☐ Yes | ☐ No | ☑ N/A |

**Bridge No:** 34-0006
**Component:** SAS Tower

**Summary of Items Observed:**

Caltrans Quality Assurance Inspector (QA) Joe Adame arrived at the American Bridge/Fluor (ABF) job site between the times noted above in order to monitor ABF Quality Control functions and the in work being performed by ABF personnel. The following items were observed:

Tower Electroslag Welds:

The QA Inspector was present to perform Ultrasonic Testing (UT) verification on Electroslag (ESW) welds on the interior of the Tower. The purpose of the UT inspection was for the detection of planar indications utilizing both the “pulse echo” (PE) technique and the “pitch and catch” (PC) technique for further discontinuity evaluation on ESW welds. The UT inspection was performed as a joint inspection with ABF/JV Quality Control (QC) Smith Emery NDT personnel. The QA Inspector performed joint UTSW Pitch/Catch with QC Inspector Jesse Cayabyab on the items listed below.

ESW S-043 Location “T”-80mm/100mm Thick, 70° Angle (Results below):
Y: 7225mm, X: N/A Face A
-PEUT: Ind. Lvl (A): Non Recordable Indication.
-PCUT: Ind. Lvl (A): Non Recordable Indication.

Y: 4950mm, X: N/A Face A
-PEUT: Ind. Lvl (A): Non Recordable Indication.
-PCUT: Ind. Lvl (A): Non Recordable Indication.

Y: 4870mm, X: -20 Face A
-PEUT: Ind. Lvl (A): 68, Ref. Lvl (B): 51, Att. Factor(C): 5, Ind. Rating (D): 12, SD (E): 86
-PCUT: Ind. Lvl (A): 73, Ref. Lvl (B): 51, Att. Factor(C): 16, Ind. Rating (D):6, SPa (E): 265

Y: 4870mm, X: -20 Face B
-PEUT: Ind. Lvl (A): 70, Ref. Lvl (B): 51, Att. Factor(C): 11, Ind. Rating (D): 8, SD (E): 152
-PCUT: Ind. Lvl (A): 69, Ref. Lvl (B): 51, Att. Factor(C): 16, Ind. Rating (D):2, SPa (E): 130

Y: 4950mm, X: N/A Face B
-PEUT: Ind. Lvl (A): Non Recordable Indication.
-PCUT: Ind. Lvl (A): Non Recordable Indication.

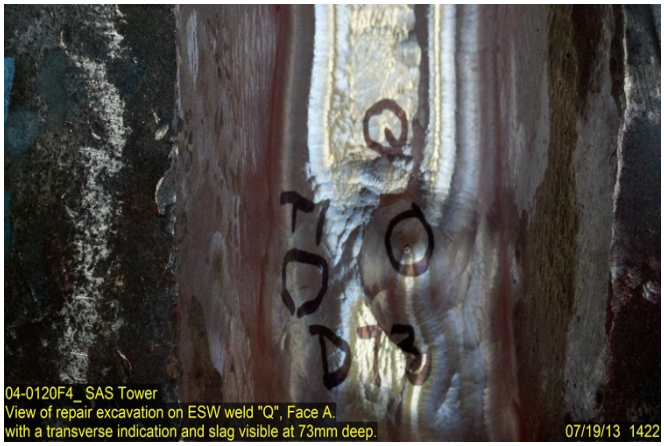
Y: 7225mm, X: N/A Face B
-PEUT: Ind. Lvl (A): Non Recordable Indication.
-PCUT: Ind. Lvl (A): Non Recordable Indication.

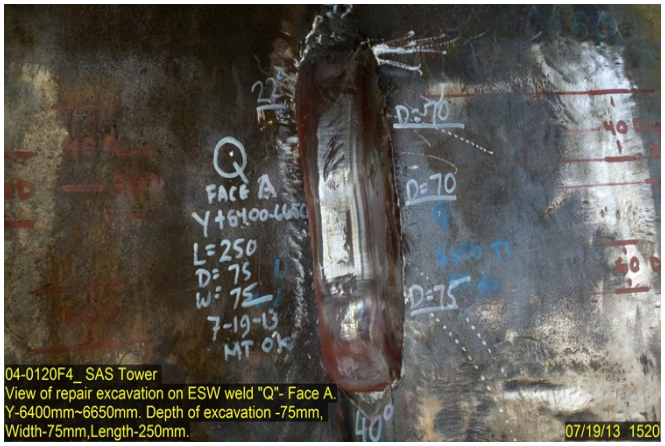
ESW S-043 Location “M”-60mm Thick, 70° Angle (Results below):
Y: 9450mm, X: N/A Face B
-PEUT: Ind. Lvl (A): Non Recordable Indication.
-PCUT: Ind. Lvl (A): Non Recordable Indication.

ESW pitch & catch UT was performed per ABF Sup. Procedure 3 UT of ESW Groove Welds Pitch- Catch. The tandem UT report for work performed on this date will be completed by QC Inspector Jesse Cayabyab and signed by both QA/QC parties to be presented to ABF & CT METS for further review.

Electroslag Weld Repairs at Ring Beam Layout Locations
ESW E-043 Location “Q”-Face A
The QA Inspector observed at random intervals, ABF/JV welder Don Plumb (WID-0891) performing carbon arc air gouging of ESW “Q” Face A, to verify indications observed during Ultrasonic Testing. ABF Quality Control (QC) Inspector Bernie Docena was observed monitoring the work and informed the QA Inspector that all indications in these Y locations will be removed and repaired for ring beam installation. Locations of the repair excavation and indications observed are as follows:
ESW Q -Face A
Y= (Original) 6460mm, 6470mm, 6560mm. Excavated 6400~6650.
Transverse indications were observed at depths of 50, 55, 60, 65,70,73mm.
Slag type indications were observed at depths of 50, 55, 60, 65, 70,73mm,
No indications observed in final excavation of 75mm deep.
L= 250mm, W= 75mm, D= 75mm*
During excavation and after grinding to bright metal Mr. Docena was observed performing MT testing at various intervals of the excavation to ensure the discontinuities were removed. The QA Inspector also performed MT inspection of the excavation and did not observe any weld defects. ABF QC Inspector Bernie Docena stated that the weld excavation has exceeded the maximum allowable depth of excavation (*85% of weld thickness) for the 80mm to 100mm transition weld. Mr. Docena also stated that ABF QC Engineers Eric Blue and Chris Chew were aware of the situation and will present to CT METS for approval prior to welding. See TL-6028 for information on

items inspected on this date.




**Summary of Conversations:**

Only general conversations with ABF/JV QC NDT personnel relevant to work and testing performed during this shift.

**Comments**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Gary Thomas (916) 764-6027, who represents the Office of Structural Materials for your project.

| | | |
|---|---|---|
| **Inspected By:** | Adame,Joe | Quality Assurance Inspector |
| **Reviewed By:** | Mertz,Robert | QA Reviewer |